

Pilot Melter Program for low-activity waste will end

Office of River Protection Manager Roy Schepens has signed an agreement with Duratek, Inc., awarding Duratek a \$2.9 million contract to deactivate and dismantle a low-activity waste one-third-scale pilot melter. The deactivation is to be completed by the end of this year.

BNFL, a division of British Nuclear Fuels, originally funded the LAW Pilot Melter Program during the Waste Treatment Plant Privatization Initiative, which began in 1996. The Department of Energy purchased the pilot melter in 2001 and gave Bechtel National the responsibility for its management.

Since testing began in January 1999, the pilot melter has met some very important performance milestones, eventually outperforming its design specifications by 50 percent. The melter was designed to produce 3.3 metric tons of glass per day, but was proven to be capable of producing at least 5 metric tons per day with the addition of "bubblers." Bubblers are used to inject air into the molten glass to increase mixing and heat transfer and achieve better production rates.

The contract outlines several tasks that Duratek must complete as part of the process of deactivating and tearing down the pilot melter. Work is scheduled to begin at the end of September. Before that, high-level waste canisters and low-activity waste containers will be filled with glass material from the melter for conducting durability tests on the container systems.

As the melter is dismantled, a photographic "autopsy" of its parts will be performed to give ORP and its contractors a sense of the melter's condition and potential life span. A salvage contractor will then dispose of the parts, and the Duratek facility that was previously reconfigured to accommodate the prototype melter will be restored to its original condition.

Under the new contract, Duratek will also be developing a conceptual design report for a second-generation low-activity-waste melter, and providing a design impact assessment on the effects of installing an optimized second-generation full-scale melter in the Low Activity Waste Vitrification Facility at Hanford. The company will also conduct tests at the Vitreous State Laboratory in Washington, D.C.

The tests will focus on altering the glass formulation to incorporate a higher level of sulfur, a material that isn't easily incorporated in significant amounts in a glassified form but is one of the many constituents of Hanford's tank waste. The tests will continue into the middle of next year. ■



This artist's rendering depicts Hanford's one-third-scale pilot melter used for testing the vitrification of low-activity tank waste. The Department of Energy purchased the melter in 2001 for the Office of River Protection's Waste Treatment Plant Project. As part of a \$2.9 million contract, Duratek will deactivate and dismantle the pilot melter by the end of this year.